

Forecast of Dental Service Needs in the South

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TO ERASE the difference between the ideal and the merely adequate in dental care is one of the greatest challenges in public health today. But since the ideal must wait upon the practical, we are concerned with the more realistic goal of providing the dentists the South will need to meet the actual demand for dental care.

This is not easy to do. State and regional boundaries are much more clearly defined on a map than they are in public health planning. The problem which the South faces in providing for the future dental health of its citizens is neither unique nor isolated. The dental manpower problem in Arizona is not only similar to that in Alabama, but the manner in which Arizona solves it will affect Alabama's answer too. A national shortage of dentists has developed—a shortage already limiting the amount of care which people who want it can get.

This shortage dates from the early 1920's, when improved standards of dental education resulted in the closing of substandard schools, and caused a sharp cut in enrollment. During the depression of the thirties, a further reduction occurred. By the time World War II began, there were fewer dentists than there were

prior to 1930, only about half as many students were attending dental school as in the mid-twenties, and not enough new dentists were being produced to replace older dentists who had died or retired. When large numbers of dentists entered the service, the shortage was further aggravated.

Persons-per-Dentist Ratio

The years since the war have seen expansion in training capacity and a rise in new dentists entering the profession. By 1955, nearly 3,100 dentists were graduated from the Nation's schools—twice the number of the last prewar class of 1941. But the population has grown much more rapidly than has the supply of dentists. By 1955, the persons-per-dentist count had risen to 2,169 from 1,870 in 1940 and 1.728 in 1930. With our larger population of 1955, it would have taken nearly 19,000 more dentists than were then in practice to restore the 1930 ratio.

Ratios in every region of the country are less favorable than in 1930, and, for some States, less favorable than in 1920. The States most affected by this adverse trend are those with the greatest population gains. Georgia, Louisiana, South Carolina, Virginia, Delaware, Maryland, West Virginia, and Texas have continued to lose ground, with current ratios considerably less favorable than those of 1940 or 1930. In four of these States, the persons-per-dentist count is now higher than at any time in this century. In fact, the only State in the

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South appreciably better off than it was in 1930 is Arkansas, and the only State which has succeeded in stabilizing the count at the 1930 level is Oklahoma. Both have been subject to heavy population losses due to migration. In the remaining Southern States, the 1955 persons-per-dentist counts are considerably better than the 1940 ratios, but are not at the 1930 standard.

The South as a whole, moreover, is still the least well supplied of any region, with only 1 dentist for every 3,572 southerners in mid-1955. This is almost two-thirds more than the number of persons served by the average practitioner in the United States (fig. 1). Florida, with nearly 2,500 persons per dentist, ranks first among the Southern States, but only 24th in the Nation. The remaining Southern States occupy 15 of the bottom 17 positions. At the end of the list is South Carolina with almost 6,000 persons per dentist, about 4 times the number served by the average dentist in one of the top-ranking States.

Although dentists are no more unevenly distributed in the South than in most regions of the country, maldistribution is especially serious because the overall supply of dentists is so limited. In the average metropolitan area, there is 1 dentist for every 2,200 persons. But in the smaller urban counties, there is only 1 for every 3,000 persons, and in counties with no

city of 10,000 or more population, the average dentist serves nearly 4,700 persons. In some States, persons-per-dentist ratios in these less populous counties reach an average of nearly 7,000. In Georgia, 1 in every 4 counties is without a dentist.

Actually, more ground has been lost than is indicated by trends in persons-per-dentist ratios. Because so few dentists were added in the years before the war, we now have a large concentration of dentists in the older age groups. The proportion 55 years old and over about doubled between 1930 and 1950, and the proportion reaching 65 years of age nearly tripled. By 1950, about 1 in every 3 dentists in the South was at least 55 years old, and 1 in 9 had reached 65 years of age. As a result, nearly half of the 14,000 dentists now practicing in the South must be replaced by 1975. Among the Southern States, Delaware, Florida, Louisiana, Oklahoma, and West Virginia face the most serious replacement problems.

Factors Affecting Demand

These needs still represent only a fraction of the total number of dentists required in the future. The population is growing, incomes are climbing, and other changes are taking place to make dental care more accessible in the

Figure 1. Dentist-population ratios in the United States and in the South.

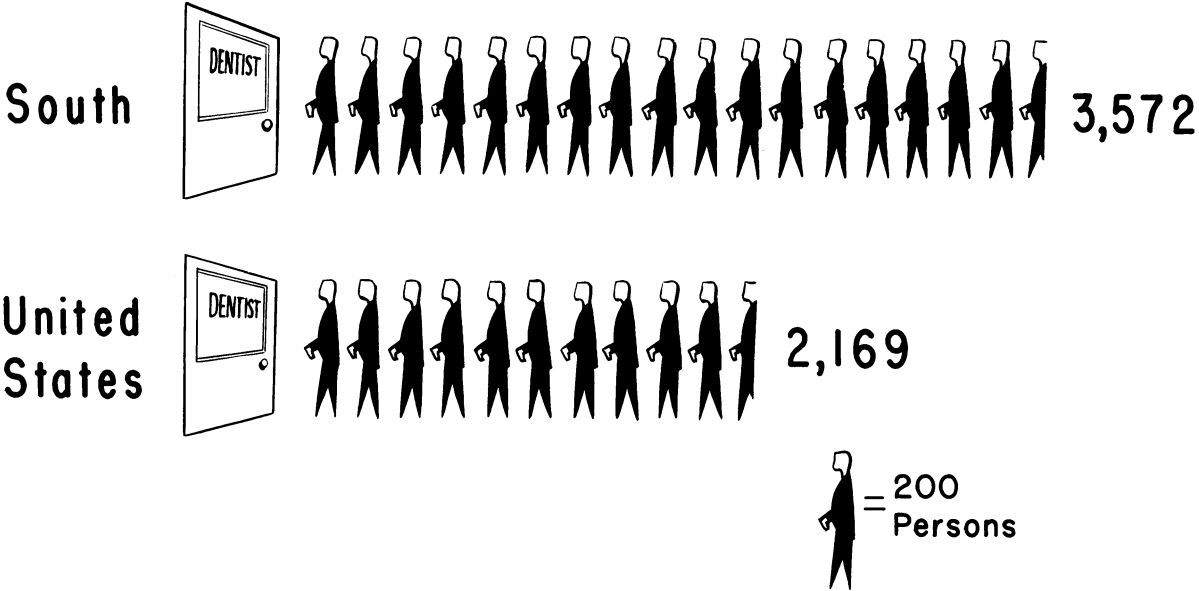
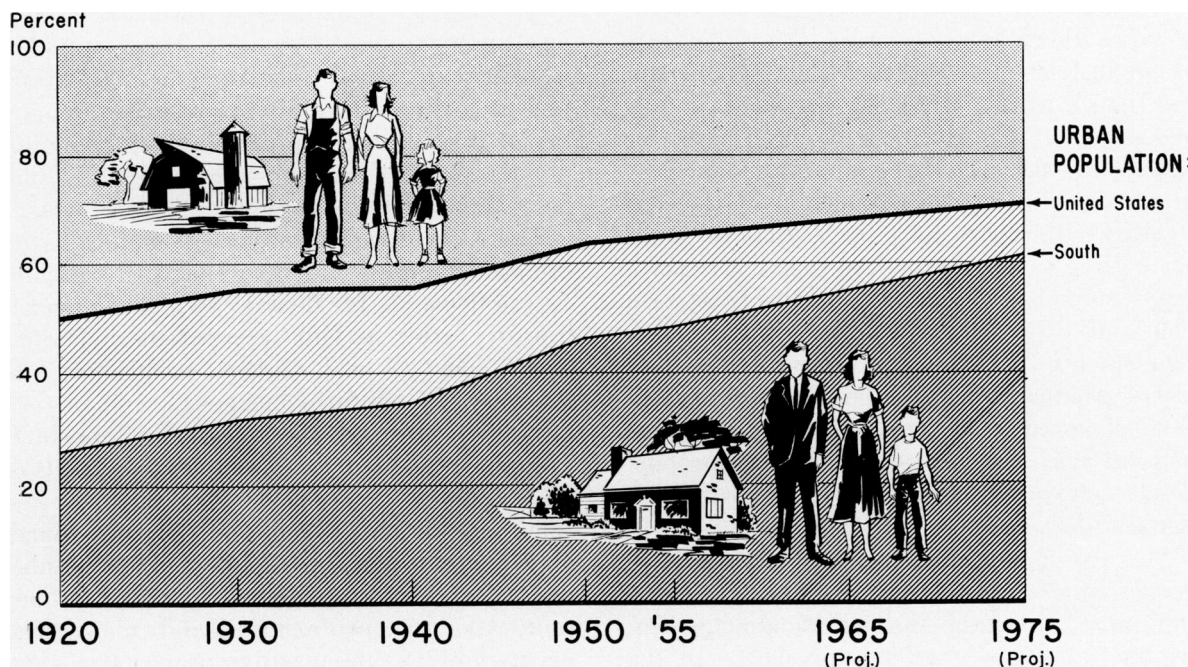


Figure 2. Proportion of urban population in the United States and in the South.



future and more likely to be sought than at present. The South, even though growing less rapidly than the rest of the country, has an annual increase in population of close to 680,000 persons a year compared with an average of 360,000 in the years before the war. Thus the equivalent of a new Dallas or a new Miami emerges full grown each year. Conservative population projections show that the South can expect to see about 640,000 persons added to its present population of about 50 million each year during the next 10 years, and then, in the following 10 years, when all the postwar "babies" start having children of their own, 825,000 a year will be added. By 1975 these figures will mean 15 million new potential consumers of dental services in the Southern States.

More important than growth, however, are changes taking place in the makeup of the population. We are, for example, rapidly becoming a nation of city dwellers. And city folk find it less inconvenient to visit dentists than do their country cousins. Moreover, city folk generally have jobs demanding a minimum standard of personal appearance and have greater cash incomes to pay for dental services. The South is still much less highly urbanized

than are other regions, but it is rapidly catching up with the remainder of the country (fig. 2). In 1930, only 33 percent of all southerners lived in cities; 23 percent less than the national average. Now an estimated 49 percent are urbanites, and the difference between the South and the country as a whole is only 16 percentage points. By 1975, if the trend continues, the southern percentage will be within 9 points of the national average.

This change means that the rural population will shrink, and the 15 million new southern residents projected for 1975 will all have been added to the city population. As a result, instead of the 25 million urban residents of 1955, there will be 42 million in 1975, about 17 million more people living in towns and cities, subject to all the subtle influences that make urban residents the largest consumers of dental services. A good share—perhaps upwards of three-quarters of the net increase in the population during this period—will be registered by the big metropolitan areas, thus facilitating access to specialists' as well as generalists' services.

Education for the average southerner will also be greatly increased (fig. 3). We may assume that the percentage of southerners completing high school will rise until by 1975 it

reaches the level that in 1950 characterized the country as a whole. Approximately 28 percent of all southern adults between 25 and 65 years of age in 1950 had completed high school. But less than a fifth of those 45 years old or over had done so. These will be replaced by better educated youth. And, of course, the number of people reaching 25 years of age during the next 20 years will be very much larger than the number leaving this age group, so that 4 in every 5 people added to the adult population between 1950 and 1975 will have finished high school. Consequently, by 1975, the proportion of high school graduates within the total group will have advanced to 46 percent from only 28 percent in 1950. Probably an even greater proportional change will occur in those receiving college training.

This rise in education in the South will have far-reaching consequences: Adults in general and, more important, the parents among them are likely to have greater appreciation of the value of oral health than is the case today.

Significantly, the States most affected by new levels of education will be those in which these levels now lag most seriously: Mississippi, the Carolinas, Georgia, and Alabama. In States now at the top of the education scale, the number of high school graduates among the adult population will probably double by 1975, but more than triple in the low-ranking States.

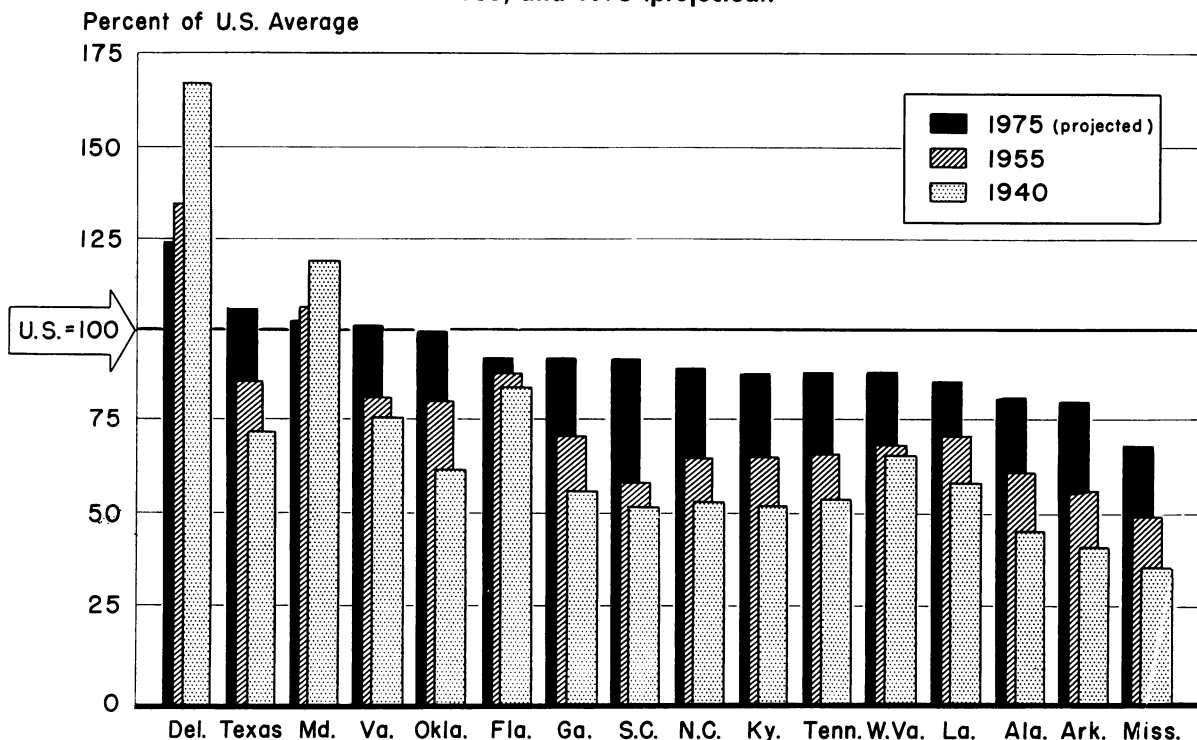
The ways in which southerners make a living are also changing in a way that spells greater future demands for dental care. The trend is toward better paying occupations. Professional and technical workers, proprietors and managers of nonfarm businesses, and clerical and sales workers—the so-called white-collar groups—accounted for more than two-thirds of all employment expansion between 1940 and 1950, although they made up only one-fourth of the total work force in 1940. The number of clerical workers increased by about 80 percent, and the professional and managerial groups and the sales group by nearly 50 percent.

Skilled craftsmen showed the second largest

Figure 3. Current and expected portions of adult population with at least high school education, in each of the Southern States.



Figure 4. Average income in Southern States as percentage of United States average, for 1940, 1955, and 1975 (projected).



gain of all, increasing by more than 70 percent. The semiskilled occupations, on the other hand, registered a 50 percent increase, while the unskilled group gained but 11 percent. The farming occupations declined.

To a great extent these changes reflect a nationwide pattern. In the South they were far more pronounced during the 1940's than in the country as a whole. They mirror the gradual transformation of the region's economic character.

Southern industrial growth, both during and especially since the war, has been significant, although the region is still more dependent upon agriculture than are other sections of the country. The percentage of the Southern States' income from agriculture was cut in half between 1940 and 1955. At the same time, the percentage increase in southern manufacturing output (as measured by value added to raw materials by fabricating and processing) was a fifth larger than the national rate of increase for this period. Only Maryland, North Carolina, Virginia, and West Virginia failed to outpace the Nation during this period of phenomenal industrial growth.

The shifting economic base of the region has been important in improving the economic status of the average southern citizen, so that he is increasingly able to meet the costs of dental care.

A nationwide survey in 1953 by the Health Information Foundation showed that only 17 percent of the members of families with annual incomes of less than \$2,000 had any dental care within a year, compared with 57 percent of those from families with \$7,500 or more. Dental expenditures in excess of \$45 for the year were reported by less than 10 percent of the low-income families, but by 40 percent of families with higher incomes.

Per capita income in the South has risen almost steadily ever since 1930, in absolute terms and as a percentage of the national average. In the last prosperous year before the depression, per capita income was only 59 percent of the national figure. By 1940, it had climbed to 64 percent and by 1955 to 76 percent. Projections of this trend indicate that by 1965 income in the South will be only 13 percent below the national average, and by 1975, but 4 percent.

When we apply this larger percentage for

1975 to an estimate of what income in the United States will be in 1975, the resulting change for the South is breathtaking. Parenthetically, this national figure is based on projections which already appear conservative. Expressed in 1955 dollars, average personal income in the Nation will rise from about \$1,850 now to about \$2,550 in 1975, an increase of about \$700. Southern per capita income, however, will rise by \$1,050, climbing from \$1,400 to \$2,450.

Where incomes are already above the national average, they will tend to drop as a percentage of the national figure. In most of the States, however, incomes will rise more rapidly than in the Nation and by 1975 will be a much higher percentage of the national total than they are today. By 1975, Delaware, Oklahoma, Maryland, Texas, and Virginia will have average in-

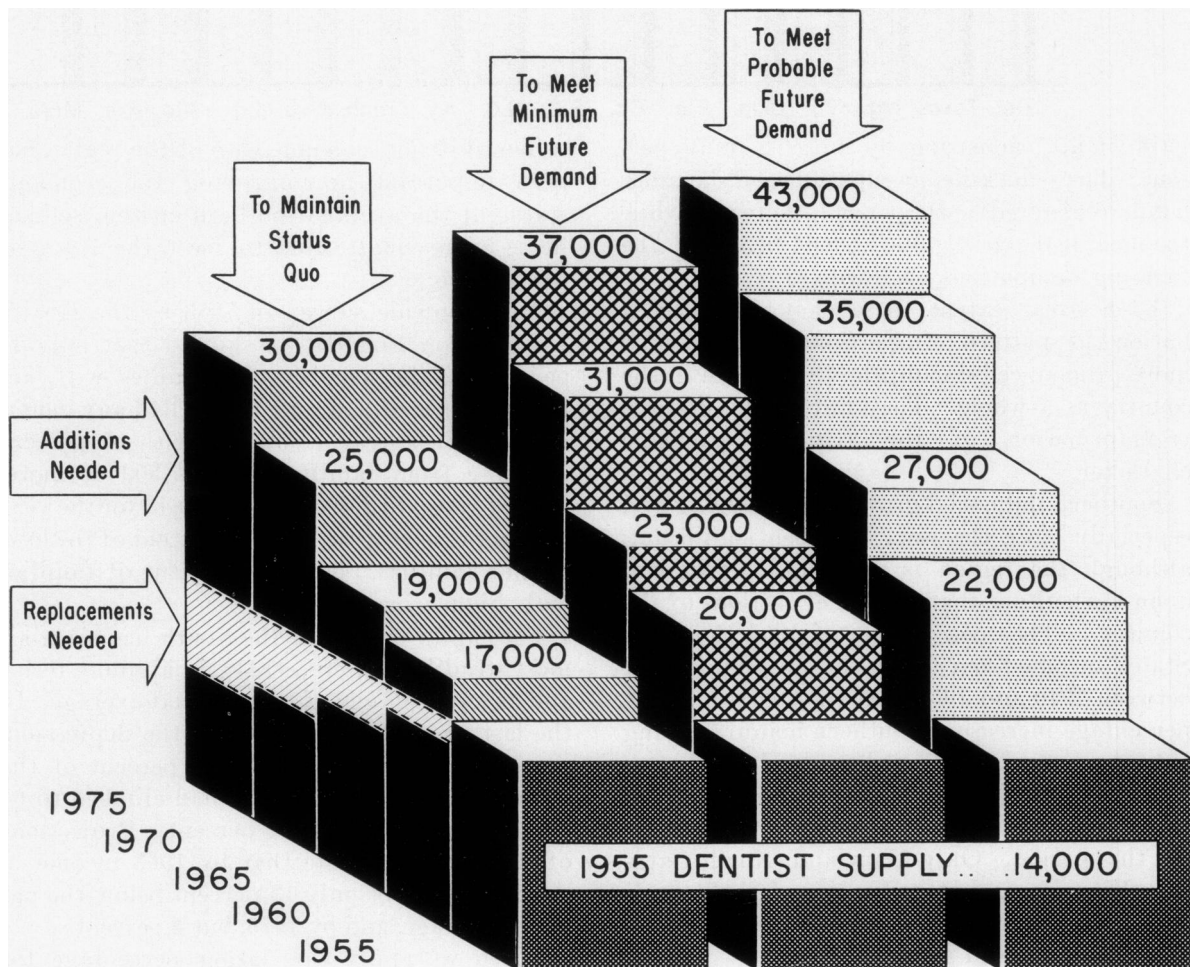
comes exceeding the national figure. South Carolina will make the greatest progress (fig. 4).

Future Manpower Needs

With per capita income going up to nearly twice its current level and the population growing by some 15 million, the total income available in the Southern States will increase enormously by 1975. If we assume that these States will spend no greater share of that future income on dentists' services than they do today, the South will need approximately 16,000 additional dentists by 1975.

Yet today the South has fewer dentists in relation to income than any other region, even after full allowance is made for low educational attainment and the large rural population. For

Figure 5. Current and projected need for dental services in the South.



this reason, it is realistic to assume that future demand will at least equal that of 1955 in the average State and will more probably approximate the average for the 24 top-ranking States, provided again that differences in education and urbanization are taken into account.

To increase the dentist supply in each Southern State sufficiently to meet the demand level existing in today's average State, nearly 23,000 additional dentists will be required by 1975.

However, to bring the dentist supply up to a level equivalent to the average among the 24 top-ranking States today, a level adequate for meeting probable demands for service, about 29,000 more dentists will be needed by 1975. Add to these figures the 7,000 necessary as replacements for those who die or retire and the results are staggering.

At every level of estimate, Texas, Florida, Virginia, and Maryland account for approximately half of the region's entire requirements. Delaware and South Carolina will have greater proportionate needs, however. In these States, additions and replacements needed by 1975 to meet probable service demands are equal to about four times their current dentist totals. Even Arkansas, Mississippi, Oklahoma, and West Virginia, with the smallest proportionate

needs, will have to attract 1½ times as many dentists by 1975 as they have now.

Estimates of future supply prepared 2 years ago by the Division of Dental Resources, Public Health Service, indicate that the Southern States will fall seriously short of these goals. In spite of current and projected expansion in training capacity, it seems unlikely that the region can build up its dentist supply sufficiently even to maintain the status quo unless training facilities are substantially increased.

What the South can do to avert the acute shortage of manpower is now under study by the Southern Regional Education Board, set up and supported cooperatively by the Southern States to further education opportunities of their youth.

The manpower requirements presented here are really minimum requirements for attaining a standard of oral health that we already know to be far from satisfactory. Staggering as they may seem from a distance of 20 years, the estimates of future needs are only a fraction of the dental force necessary to provide the southern people with the care that they should have. As realists, we accept the lesser goal of meeting demands for dental care, but we must intensify our efforts to stimulate people to seek the care they need. In dentistry as in all health care, nothing less than the ideal can ever be adequate.

Course in Epidemiology for Nurses

Epidemiological principles, the role of the laboratory in epidemiology, and the application of practical statistical methods to the problems in field epidemiology will be studied in terms of current major communicable diseases from April 14 through May 2, 1958, at the Communicable Disease Center in Atlanta, Ga.

Those eligible for admission to the course are communicable disease nursing consultants, public health nursing supervisors, educational directors, qualified public health staff nurses, industrial nurses, instructors in schools of nursing, and other nurses having supervisory, teaching, or consultant functions.

Application forms and further information can be obtained from the Chief, Nursing Section, Epidemiology Branch, Communicable Disease Center, Public Health Service, 50 Seventh Street NE., Atlanta, Ga., or from the director of public health nursing of the State health departments. The closing date for acceptance of applications is March 17, 1958.